342 N. Co. Rd. 400 East
Valparaiso, IN 46383
219-464-8818 • Fax 219-462-7985
www.heatwagon.com

Installation and Maintenance Manual

Please retain this manual for future reference.

VG175

Construction
Heater



For your safety: Do not use this heater in a space where gasoline or other liquids having flammable vapors are stored.

Revision 1-06

IMPORTANT INFORMATION! READ FIRST

The heater is designed for use as a construction heater under ANSI Z83.7a-2000. The primary purpose of construction heaters is to provide temporary heating of buildings under construction, alteration, or repair and to provide emergency heat. Properly used, the heater provides safe, economical heating. Products of combustion are vented outside the area being heated.

The heater **IS NOT** designed as an Unvented Gas Fired Room Heater under ANSI-Z21.11.2 and **SHOULD NOT** be used in the home.

ANSI A119.2(NFPA 501C)-1987 Recreational Vehicle Standard prohibits the installation or storage of LP-gas containers even temporarily inside any recreational vehicle. The standard also prohibits the use of Unvented Heaters in such vehicles.

NFPA-58 1989 STANDARD FOR THE STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES

Use of the heater must be in accordance with this Standard and in compliance with all governing state and local codes. Storage and handling of propane gas and propane cylinders must be in accordance with NFPA 58 and all local governing codes.

We cannot anticipate every use which may be made for our heaters. **CHECK WITH YOUR LOCAL FIRE SAFETY AUTHORITY IF YOU HAVE QUESTIONS ABOUT LOCAL REGULATIONS.**

Other standards govern the use of fuel gases and heat producing products in specific applications. Your local authority can advise you about these.

FOR YOUR SAFETY

DO NOT USE THIS HEATER IN A SPACE WHERE GASOLINE OR OTHER LIQUIDS HAVING FLAMMABLE VAPORS ARE STORED OR USED.

CONSTRUCTION HEATER GENERAL HAZARD WARNING:

Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury and property loss or damage from the hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/or electrical shock.

Only persons who can understand and follow the instructions should use or service this heater.

If you need assistance or heater information such as an instruction manual, labels, etc., contact your local Heat Wagon dealer or the manufacturer.

W A R N I N G

Fire, burn, inhalation, and explosion hazard. Keep solid combustibles, such as building materials, paper or cardboard, a safe distance away from the heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles, or products such as gasoline, solvents, paint thinner, dust particles or unknown chemicals.

Not for home or recreational vehicle use!
If you have read this entire manual and you still have questions, please call us at 219-464-8818

Installation and Maintenance Manual
Model VG175
Construction Heater

Table of Contents:

WARRANTY

This heater is guaranteed against defective materials and workmanship for one (1) year from Heat Wagon invoice date.

Warranty repairs may be made only by an authorized, trained and certified Heat Wagon dealer. Warranty repairs by other entities will not be considered. Warranty claims must include model number and serial number. Components are guaranteed to the extent of the component manufacturer's warranty.

LIMITATIONS

Warranty claims for service parts (wear parts) such as spark plugs, igniters, and flame rods will not be allowed. Diagnostic parts such as voltage meters and pressure gauges are not warrantable. Evidence of improper fuel usage, fuel pressures outside of manufacturer's specification, poor fuel quality, improper electric power, misapplication and/or evidence of abuse may be cause for rejection of warranty claims.

Labor, travel time, mileage and shipping charges will not be allowed. Minor adjustments to heaters are the responsibility of the dealer. Defective parts must be tagged and held for possible return to the factory for 60 days from date of repair. The factory will provide a return goods authorization, (RGA) for defective parts to be returned. No warranty will be allowed for parts not purchased from Heat Wagon.

heat wagon

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SAFETY & CAUTION

- Instructions given in this manual and the applicable regulations of the local authorities must be followed.
- The unit may be operated only by those persons who have been instructed in its proper use.
- The unit is to be installed and operated in such a way as to ensure the safety of employees and surroundings.
- Never cover the unit's air openings.
- Always ensure adequate fresh air supply to the unit.
- Never stand in front of the discharge end of the heater.
- Keep a minimum clearance of 10 feet from the fuel source. Storing and use of liquid fuel must comply with the regulations and instructions given by the local authorities.
- Unit's emitted noise level at the range of 3 feet: 74 dBA.
- Do not introduce foreign objects into the unit.
- Do not expose the unit to direct water jets.
- All electric cables outside the unit are to be protected against damage.
- Always disconnect the unit from power supply and turn off the gas supply when maintenance or service is being performed.
- **IF NOT OPERATED WITHIN GUIDELINES OF THESE OPERATING INSTRUCTIONS, MANUFACTURER WILL NOT BE HELD RESPONSIBLE AND WARRANTY WILL BECOME VOID.**

SPECIFICATIONS

Model No. VG175

Fuels:	Vapor Propane or Natural Gas
Capacity:	175,000 BTU/HR*
Blower:	1,400 CFM 1/2" SP
Electrical Rating:	120 Volts, 10 Amps
Fuel Consumption:	NG-175 CFH / Propane-1.9 GPH
Remote Thermostat:	On/Off
Max. Discharge Temp.:	200°F @ 0°F Ambient
Duct Size:	8" Dia., 25 ft. max (straight), temp rating 300°F min.
Weight (approximate):	186 lbs.

Gas Supply:	**Inlet Pressure**		**Manifold Pressure**	**Burner Orifice**
	Max W.C.	**Min W.C.**	**W.C.**	
Vapor Propane	14 W.C.	9" W.C.	3"	.201
Natural Gas	14 W.C.	9" W.C.	3.2"	.261

*Note: Overfiring this heater above 195,500 BTU(Nat. Gas) or 184,000 BTU(Propane) will result in inefficient combustion. In order to avoid this possibility the factory standard input rates are adjusted 15% below these ratings.

OPERATING INSTRUCTIONS

INSTALLATION

- When transporting, use both lifting eyes located on sides of heater.
- Place the unit on a level and non-combustible surface.
- Minimum clearances from combustibles:
  - outlet, minimum 10 feet
  - sides, minimum 3 feet
  - top, minimum 3 feet
  - flue pipe exhaust, gas discharge minimum 2 feet
- Manufacturer recommends a free zone of 5 feet around the unit and a minimum distance of 10 feet at the unit's flue gas openings are to be maintained.
- If the unit is placed indoors, secure an adequate fresh air opening for the burner combustion air.
- The unit may not be installed and operated in premises where explosive or combustible fumes or dust are present. Always check the regulations of local authorities.
- Be certain that neither the air inlet nor the air outlet is obstructed.

FUEL SUPPLY

- This heater is shipped as either natural gas or vapor propane. Check for proper burner orifice in burner.

Natural Gas	.261	PN 62182
Vapor Propane	.201	PN 62371-020

- Be certain to use adequate hose or pipe size to ensure proper volume and pressure. See Chart Below.

NATURAL GAS QUICK REFERENCE HOSE CHART

Hose Length in Feet	BTU 175,000 <1PSI	2PSI	5PSI
10	3/4	3/4	-
25	3/4	3/4	-
35	3/4	3/4	-
50	1-1/4	3/4	-
75	1-1/4	3/4	-
100	1-1/4	3/4	-
125	1-1/4	3/4	-
150	1-1/4	3/4	-
175	1-1/4	3/4	-
200	1-1/4	3/4	-
225	1-1/4	3/4	-

VAPOR PROPANE QUICK REFERENCE HOSE CHART

Hose Length in Feet	BTU 175,000 1/2PSI	10PSI
10	3/4	3/4
25	3/4	3/4
35	3/4	3/4
50	3/4	3/4
75	3/4	3/4
100	1-1/4	3/4
125	1-1/4	3/4
150	1-1/4	3/4
175	1-1/4	3/4
200	1-1/4	3/4
225	1-1/4	3/4

For supply pressures greater than 1/2psi

- A regulator must be installed on the heater to ensure that the pressure to the heater does not exceed 1/2 psi inlet pressure. Excessive pressures over 1/2 psi (14" W.C.) will damage controls and void warranty.

FUEL SUPPLY (CONTINUED)

- Ensure that for the surrounding temperature, size and capacity of the propane supply cylinder is adequate to provide the rated Btu/hr input to the heater.
- Visually inspect the hose assembly and ensure that it is protected from traffic, building materials, and contact with hot surfaces. If it is evident that there is excessive abrasion or wear, or the hose is cut, replace it immediately.
- Purge air from line and wait 10 minutes for gas to dissipate.
- After installation, check the hose assembly for gas leaks by applying a water and soap solution to each connection.
- Fuel hose must be UL approved.
- The installation of this heater to a natural gas supply must confirm with all applicable local codes or, in the absence of local codes, with the *National Fuel Gas Code ANSI Z223.1/NFPA 54*. For vapor propane, refer to standard for *Storage and Handling of Liquified Petroleum Gases ANSI/NFPA 58*.

ELECTRICAL

- Electric cable extensions must be connected based on the unit capacity and cable length.

- Confirm voltage at heater connection (105V min.) to ensure proper operation.

EXHAUST FLUE PIPE

- The unit is to be connected to a flue pipe with adequate draft, to ensure the proper start and operation of the unit. Refer to page 19.
- The flue pipe is to be made of non-combustible material and clearances from combustible materials must be a minimum 8 inches (temperature of flue gases is approximately 410° F).
- The flue pipe and its installation must comply with the regulations and instructions given by the local authorities.

START UP

- Only people trained in the operation and supervision of this heater should operate and maintain the unit.
- Check the unit to make sure that there are no visible defects on the control and safety devices and that the unit has been installed correctly.
    1. Check that the control switch on the control box is in position “0” (STOP).
    2. Pre-select desired room temperature on the room thermostat. <u>The temperature must be set higher than the ambient temperature.</u>
    3. Open all possible shut-off devices of the fuel supply lines.

START UP (CONTINUED)

4. Turn the control switch on the control box to position “1” (HEATING).
5. When the ambient temperature level is low, the burner switches on automatically. The fan does not switch on until the set temperature (104°F) of the heat-exchanger has been reached (will take approximately 1-5 minutes).

- After startup, the heater is operated automatically by the room thermostat and governed by all control devices, including the safety limit controls.
- The room thermostat (TSTAT) and burner sensor control the running sequences of the burner and the fan sensor controls the fan function.
- Overheat limit reset (STB) controls and shuts off the heater (burner) in the case of overheating.
- The unit can also be used for ventilation purposes only, if needed.
  1. Turn the control switch on the control box to position “2” (VENTILATION).
  2. The unit is now in the continuous ventilating mode.
  3. Heating is not possible in this mode.

DUCTING (Warm Air)

- Minimum clearance from combustible materials is 4 inches.
- Use steel ducting or fabric ducting capable of withstanding maximum temperature of 300°F.
- Maximum length of duct: 25’ (straight).
- Duct diameter: 8”.
- Make sure that the duct is safely and properly fastened to the outlet.
- Avoid sharp bends and corners to ensure maximum air flow and avoid back pressure/heat accumulation in heater.
- FAILURE TO COMPLY WITH THESE RECOMMENDATIONS COULD RESULT IN SHUTDOWN OF THE HEATER.

SHUT DOWN

- Turn control switch to position “0” (STOP).
- Close fuel supply.

Important!
The air supply fan continues running to cool down the combustion chamber/heat exchanger and then stops later. The fan can restart for several times before finally switching off!

WARNING!
UNIT MAY BE UNPLUGGED IN EMERGENCY SITUATIONS ONLY. OTHERWISE, DO NOT STOP THE UNIT BY UNPLUGGING IT. UNIT NEEDS TO COOL DOWN USING ITS OWN FAN. FAILURE TO COMPLY WITH PROPER SHUT-DOWN PROCEDURES CAN CAUSE DAMAGE TO THE COMBUSTION CHAMBER, HEAT EXCHANGER, SAFETY FEATURES AND VOID WARRANTY.

MAINTENANCE

Prior to starting any maintenance work be sure to disconnect unit from power supply until unit cools down fully and fan shuts off! (Shut Down Procedures page 7)

To ensure the proper function of the unit, it must be serviced on regular basis. Maintenance can be performed, excluding the control devices and safety limit controls, by an authorized trained & certified Heat Wagon dealer. The control devices and safety limit controls do not need routine maintenance. If these items fail they must be replaced.

- Do not use any aggressive cleaning agents, which are harmful or environmentally unfriendly, when cleaning the unit.
- Do not use water jet when cleaning the unit.
- Pressurized air may be used for maintenance. Be careful not to damage the fan blower wheel with too much pressure.
- Check whether the unit is free from mechanical damage, replace faulty parts as necessary.
- Check fan blower wheel of the fan at regular intervals and clean it when needed.
- Check functionality of control and safety devices regularly.
- Have the flue gas values of the burner checked regularly by authorized agents.
- Be sure to store the unit in a dust free and dry place when it is not used for a long period of time. Cover the exhaust flue to prevent entry of foreign objects.

SERVICE

- The complete unit, including heat exchanger, combustion chamber and burner should be cleaned from dust and dirt after every heating period, at a minimum of once per year.

-Removal of combustion chamber/heat exchanger:

For proper cleaning of the unit, manufacturer recommends removal of the complete combustion chamber with heat exchanger. Clean combustion chamber and exchanger tube with brush. Vacuum all loose ash and soot. Close all cleaning flanges carefully to avoid damage to gasket material.

-Disassembling of burner:

1. Disassemble four tightening bolts on the combustion chamber flange and remove burner's mounting flange. Take care not to damage the flange seal.

2. Pull out the burner. Take care not to damage the burner head and power cable. Clean blower wheel, ignitor electrode, and flamerod.

Refer to seperate burner manual for adjustment of burner.

VG175 TROUBLESHOOTING

Symptom	Possible Causes	Possible Solutions
1. Turn the heater to position #1 and nothing happens.	• Power supply cord	• Test for 120 volts between L1 and N on the main terminal block.
	• Burner lock out on the burner flame safeguard control box is engaged	• Turn thermostat off and on.
	• Overheat limit switch is tripped	• Reset switch, located on the right hand corner (facing the right hand side of the unit) .
	• 24 volt transformer	• Using a volt meter, check for 24 volts AC between ground and one of the "T" terminals on the burner control box. If less than 24 replace transformer.
	• Burner motor relay	• Turn on the heater. Check for 120 volts between ground and both black wires on the relay. Relay is located in the burner control box under the flame safeguard control. If less than 105 replace relay.
	• Burner sensor	• On the heater control unit (HCU) disconnect the wires from terminals X10 and X11. Using an ohm meter, check the resistance between the two wires for a reading of 8K-15K ohms. Replace sensor if out of range.
	• Heater control unit (HCU)	• On the main terminal block, check for 120 volts between terminals 8 and N when the 3-position switch is in the HEAT position. If less than 105 replace HCU.
2. The heater runs for a little while, but shuts down. It won't come on again until I reset the limit switch.	• Burner orifice is improperly sized	• For propane, use size .201. For natural gas, use size .261.
	• Incorrect burner manifold pressure	• Use a low pressure gauge (0-15 inches of water column) with a 1/8" NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) counter clockwise until the gauge reads 3" W.C.(Propane) & 3.2"W.C.(Nat Gas)
	• Restricted airflow	• Check for dirt or ice buildup on the air inlet or blower wheel. If using duct on the air outlet, insure the back pressure does not exceed a static pressure of .25" W.C. Check with low pressure gauge if necessary (0-15 inches of water column).
	• Overheat limit switch faulty due to loss of power	• Adhere to the proper shut down procedures. Power must remain at the unit until it cools down fully. Blower will shut down on its own when cool. Test overheat limit switch for continuity between the two male terminals at room temperature. Replace if overheat limit switch fails test.

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VG175 TROUBLESHOOTING

Symptom	Possible Causes	Possible Solutions
3. The heater has a loud rumbling sound.	• Air damper setting	• Rough setting at 6. Minor adjustments from the rough settings can be made to achieve a smooth sounding burner with no soot from the flue pipe.
	• Dirt on burner blower wheel	• Clean the burner blower wheel with a small brush.
	• Flue pipe setup or flue pipe restrictions	• Refer to the flue pipe chart in this manual. Check flue for restriction.
	• Gas manifold pressure	• Use a low pressure gauge (0-15 inches of water column) with 1/8" NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) counter clockwise until the gauge reads 3" W.C.(Propane) & 3.2"W.C.(Nat Gas). Refer to pipe sizing charts in the Heat Wagon Engineering guide, Heater requires 9-14" W.C. inlet pressure. Ensure proper purge procedure (see fuel supply installation).
	• Burner orifice size	• For propane, use size .201. For natural gas, use size .261.
	• Restrict heat exchanger	• Remove flue pipe and use a flashlight to inspect the inside of the heat exchanger. The access panel is located in the front panel which is welded to the flue pipe. Clean the inside of the heat exchanger.
4. Burner motor comes on, but the heater won't ignite.	• Fuel pressure or volume	• Use a low pressure gauge (0-15 inches of water column) with 1/8" NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) counter clockwise until the gauge reads 3" W.C.(Propane) & 3.2"W.C.(Nat Gas). Refer to pipe sizing charts in the Heat Wagon Engineering Guide. Heater requires 9-14" W.C. inlet pressure.
	• Air inlet damper adjustment	• Rough setting at 4.5. Minor adjustments from the rough settings can be made to achieve a smooth sounding burner with no soot from the flue pipe.
	• Ignition electrode	• Clean with fine sandpaper. Make sure it is free from buildup or cracks.
	• Electronic igniter	• Turn off the gas valve, turn on the burner. Use insulated pliers to hold the ignition wire and short it to ground. Pull the wire away from ground slowly. A rainbow colored arc should travel between the wire and the ground at a distance of 3/8 of an inch for a duration of 4-5 seconds.

VG175 TROUBLESHOOTING

Symptom	Possible Causes	Possible Solutions
4. Continued	• Gas valve	• If there is power at the flame safeguard control and no power out to the solenoid valve, replace the flame safeguard control. Check for continuity between the terminals on the solenoid valve coil.
5. The heater blows black smoke out of the vent stack.	• Air damper setting	• Rough setting at 4.5. Minor adjustments from the rough settings can be made to achieve a smooth sounding burner with no soot from the flue pipe.
	• Dirt on burner blower wheel	• Clean the burner blower wheel with a small brush.
	• Improper flue pipe setup or flue pipe restrictions	• Refer to the flue pipe chart in this manual. Check flue for restriction.
	• Gas manifold pressure	• Use a low pressure gauge (0-15 inches of water column) with 1/8” NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) counter clockwise until the gauge reads 3” W.C.(Propane) & 3.2” W.C.(Nat Gas). Refer to pipe sizing charts in the Heat Wagon Engineering Guide. Heater requires 9-14” W.C. inlet pressure.
	• Incorrect burner orifice size	• For propane, use size .201. For natural gas, use size .261.
	• Restricted heat exchanger	• Remove flue pipe and use a flashlight to inspect the inside of the heat exchanger. The access panel is located in the front panel which is welded to the flue pipe.

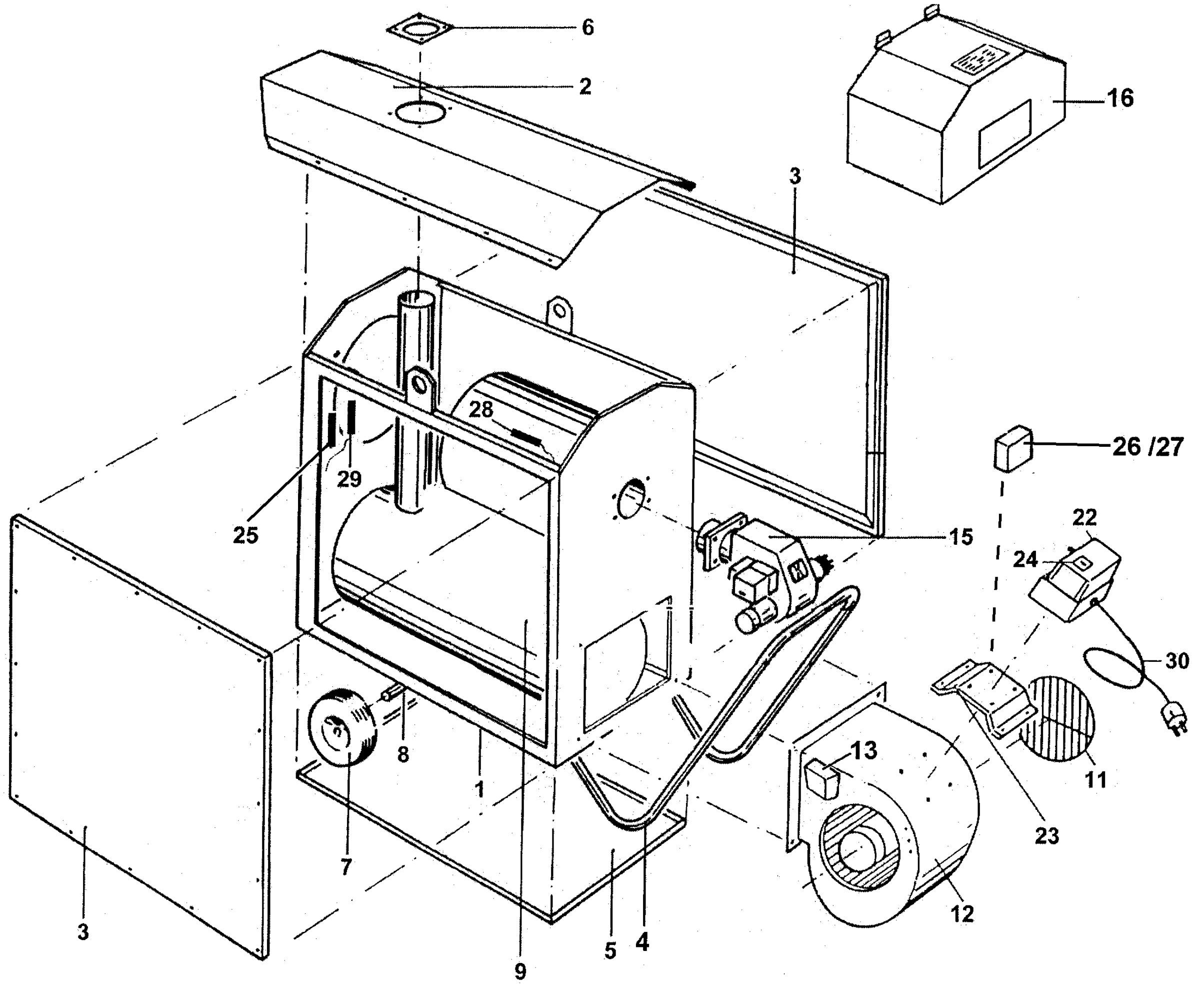
VG175 TROUBLESHOOTING

Symptom	Possible Causes	Possible Solutions
6. The burner seems to cycle on and off more than it should.	• Gas manifold pressure	• Use a low pressure gauge (0-15 inches of water column) with 1/8” NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) until the gauge reads 3” W.C.(Propane) & 3.2” W.C.(Nat Gas). Refer to pipe sizing charts in the Heat Wagon Engineering Guide. Heater requires 9-14” W.C. inlet pressure.
	• Dirt on main air blower or improper setup of outlet air duct	• Check for dirt or ice buildup on the air inlet or blower wheel. If using duct on the air outlet, insure the back pressure does not exceed a static pressure of .25” W.C. Check with low pressure gauge (0-15 inches of water column).
	• Burner sensor	• On the heater control unit (HCU) disconnect the wires from terminals X10 and X11. Using an ohm meter, check the resistance between the two wires for a reading of 8K-15K ohms. Replace sensor if reading is out of range.
	• Heater Control Unit (HCU)	• If all of the above check good, replace the HCU.
7. The burner starts, but the main fan never comes on.	• Fan sensor	• On the heater control unit (HCU) disconnect the wires from terminals X12 and X13. Using an ohm meter, check the resistance between the two wires for a reading of 8K-15K ohms.
	• Heater Control Unit (HCU)	• Turn the 3-position main switch to the fan position. If the blower runs, check the fan sensor. If it is good, replace the HCU.
	• Blower motor relay	• Turn the 3-position main switch to the fan position. If the relay pulls in, check for voltage between the L1 and L2 terminals. Then check the voltage between terminals T1 and T2. The voltage should be the same. If it is much lower, replace the relay.
	• Current overload on blower motor	• Turn the 3-position main switch to the fan position. Check for voltage between the 2 solenoid coil terminals on the relay. If there is no voltage, the overload is bad. Replace the motor and blower assembly.
	• Blower motor	• Turn the 3-position main switch to the fan position. Check for voltage between terminals T1 and T2 on the motor relay. If the voltage is good, replace the motor and blower assembly.

VG175 TROUBLESHOOTING

Symptom	Possible Causes	Possible Solutions
8. The burner continues to run, but the fan cycles on and off.	• Gas manifold pressure	• Use a low pressure gauge (0-15 inches of water column) with 1/8” NPT inlet. Install gauge in the pressure tap port located on the output side of the gas valve. Run the heater. Adjust the pressure by turning the pressure adjusting screw (located on the input side top of the gas valve) until the gauge reads 3” W.C.(Propane) & 3.2” W.C.(Nat Gas). Refer to pipe sizing charts in the Heat Wagon Engineering Guide. Heater requires 9-14” W.C. inlet pressure.
	• Fuel supply pressure and volume	• Refer to pipe sizing charts in the Heat Wagon Engineering Guide. Heater requires 9-14” W.C. inlet pressure.
	• Fan sensor	• On the heater control unit (HCU) disconnect the wires from terminals X12 and X13. Using an ohm meter, check the resistance between the two wires for a reading of 8K-15K ohms. If the test falls out of this range, replace fan sensor.
	• Heater Control Unit (HCU)	• Turn the 3-position main switch to the fan position. If the blower runs, check the fan sensor. If it is good, replace the HCU.

Heat Wagon VG175 Parts List



ITEM	PART#	DESCRIPTION
1	HWP 2709001	HEATER FRAME
2	HWP 2709002	COVER PLATE
3	HWP 2709003	SIDE PANELS (2)
4	HWP 2709004	REAR HANDLE
5	HWP 2709005	BOTTOM PLATE
6	HWP 120001	FLUE COLLAR
7	HWP 2701065	WHEEL
8	HWP 2709008	WHEEL SHAFT
9	HWP 2709009	BURNER CHAMBER ASSEMBLY
11	HWP 2709011	FAN GUARD, RIGHT
12	HWP 2701244	FAN, COMPLETE
13	HWP 40900	FAN CONNECTION BOX
15	HWP 63956	BURNER VG175
16	HWP 2709016	BURNER COVER
22	HWP 41000	MAIN CONTROL BOX
23	HWP 1709023	BRACKET, MAIN CONTROL BOX

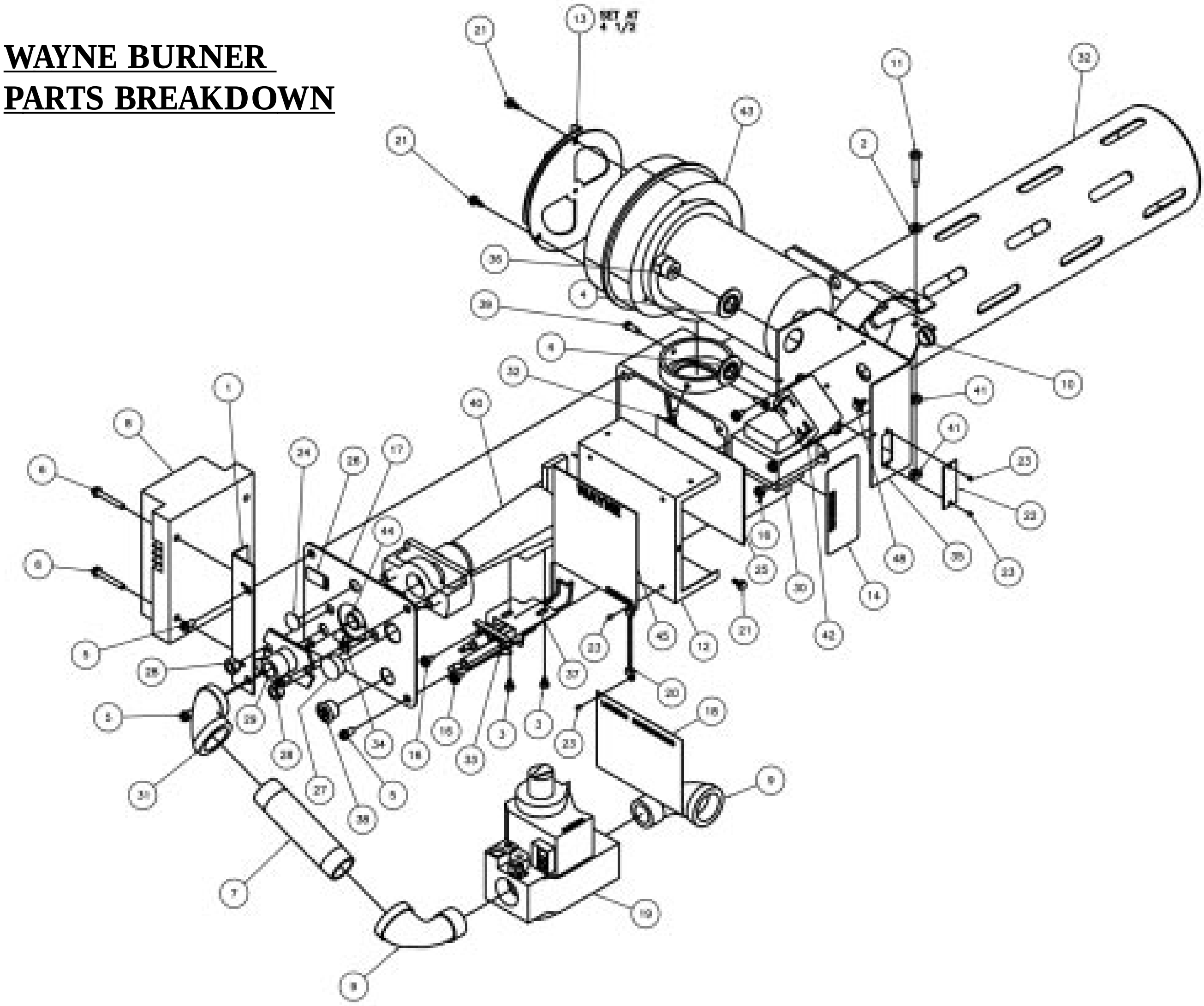
ITEM	PART#	DESCRIPTION
24	HWP 26400	MAIN SWITCH
25	HWP 21400	OVERHEAT LIMIT SWITCH (Capillary)
26	HWP 40850	THERMOSTAT BOX
27	HWP 20579	HEATER CONTROL UNIT
28	HWP 20581	FAN SENSOR (FOR POS. #27)
29	HWP 20582	BURNER SENSOR (POS. #27)
30	HWP HC1020	POWER CORD & PLUG

NOT SHOWN IN DIAGRAM

	HWP 2709031	RADIATION SHIELD (UPPER)
	HWP 12000	SMOKE FLUE W/RAIN CAP
	HWP 2453	REMOTE THERMOSTAT
	HWP 2700428	GASKET FOR BURNER MOUNT
	HWP 2704085	SILICONE SEAL - 40850 THERM. BOX
	HWP 40SV06	OPTIONAL REGULATOR FOR MORE THAN 14” W.C.
	HWP 210047	RUBBER EDGE SEAL (SOLD PER FOOT) (30 FEET PER HEATER)

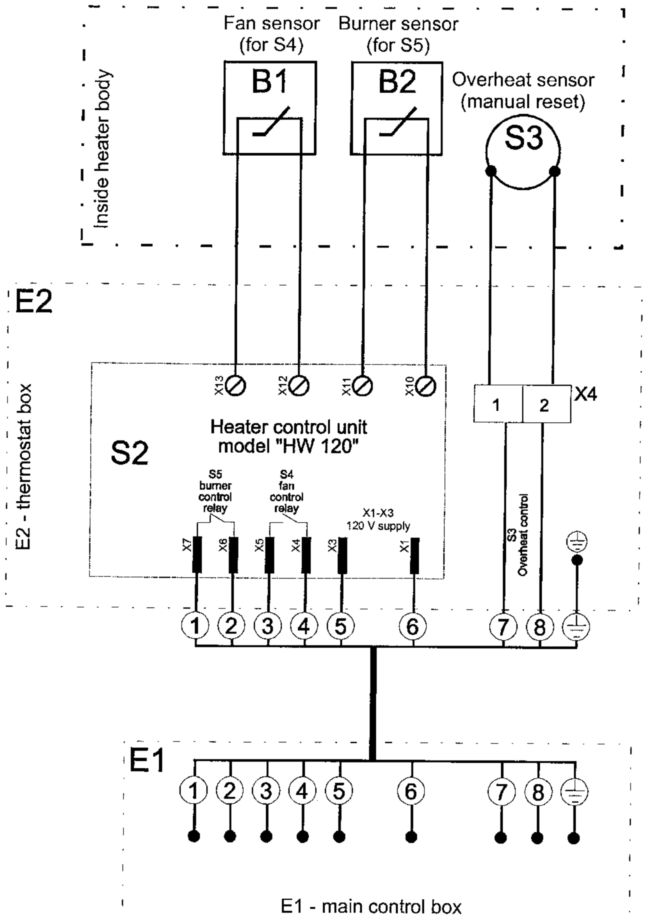
Also see Control Box Parts page 17.

WAYNE BURNER PARTS BREAKDOWN

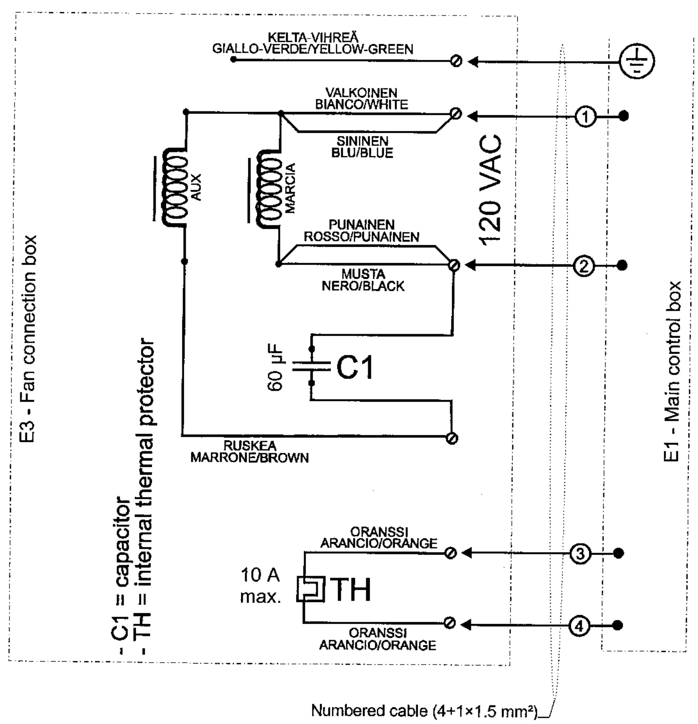


ITEM	PART#	DESCRIPTION	ITEM	PART#	DESCRIPTION
1	62700-002	Bracket, Control Mounting	25	62659-004	Decal, Wiring-Schem S87K
2	16635-002	Washer, Flat #8	26	16201	Decal, Date Code
3	63244-002	Screw, Fillester 10-24 x .250	27	63103-001	Plug, Window .84” OD
4	60226	Bushing, Metal	28	15872	Nut, 5/16 - 18 x .577
5	12697-002	Screw, HXSL 23 10-24 x .375	29	62898-001	Connector, Orifice Holder
6	100603-008	Screw, HXSL 8 18 x 1.25	30	60186-004	Transformer, 120V/24V 50/60 Hz
7	61624-002	Nipple - 3/4” x 4” TBE Blk	31	60016	Elbow, 1/2NPT x 3/4NPT-Reducing
8	101243-001	Control, Ignition	32	63957-001	Tube/Housing - (22035-001)
9	63674-001	Elbow, 3/4” NPT 90°	33	62261-002	Electrode ASM
10	60177	Bushing, Snap Insulating	34	62047	Clamp, Cable .44”ID
11	61755	Screw, RDPLMC 10-32 x 1.25”	35	62903-001	Control Box, w/strap
12	62899	Lid, Control Box	36	13026	Bushing Strain Relief .562 Hole
13	44	Shutter, Air-Pie	37	63402-001	Bracket, Electrode Mount
14	62960-001	Decal, Carbon Dioxide Warning	38	62048	Bushing, Universal
15	62360	Plug, Hole .39” Dia.	39	18007	Screw, HEXSLT #8 x 1/2” Self Drill
16	15731	Screw, 6-32 x .312 HEXSLT	40	61638-001	Venturi Asm.
17	63256-001	Plate, Back Housing	41	60054	Nut, Hex 10-32
18	61843	Plate, Instruction-Lighting	42	62406-002	Relay, 24V 50/60 Hz
19	62374-004	Valve, Gas VR8305M 4801 H-(HSG)	43	61651-004	Motor/Blower, 115V/60Hz 3200 RPM
20	61759	Chain, Bead-Type	44	62182	Orifice, #G(.261”)/6.63MM (nat. gas)
21	100603-001	Screw, 6-20 x .375		62371-020	Orifice, #G(.201”)/6.63MM (propane)
22	62658-001	Cover, Terminal Strip Hole	45	63959-001	Decal, Rating P265F DIN
23	61684	Pop Rivet .12 x .28	46	63375-001	Wire, Harness - 3 wire (not shown)
24	61830	Plug, Hole .453	47	62947-003	Wire, Ignitor Lead - 18” (not shown)

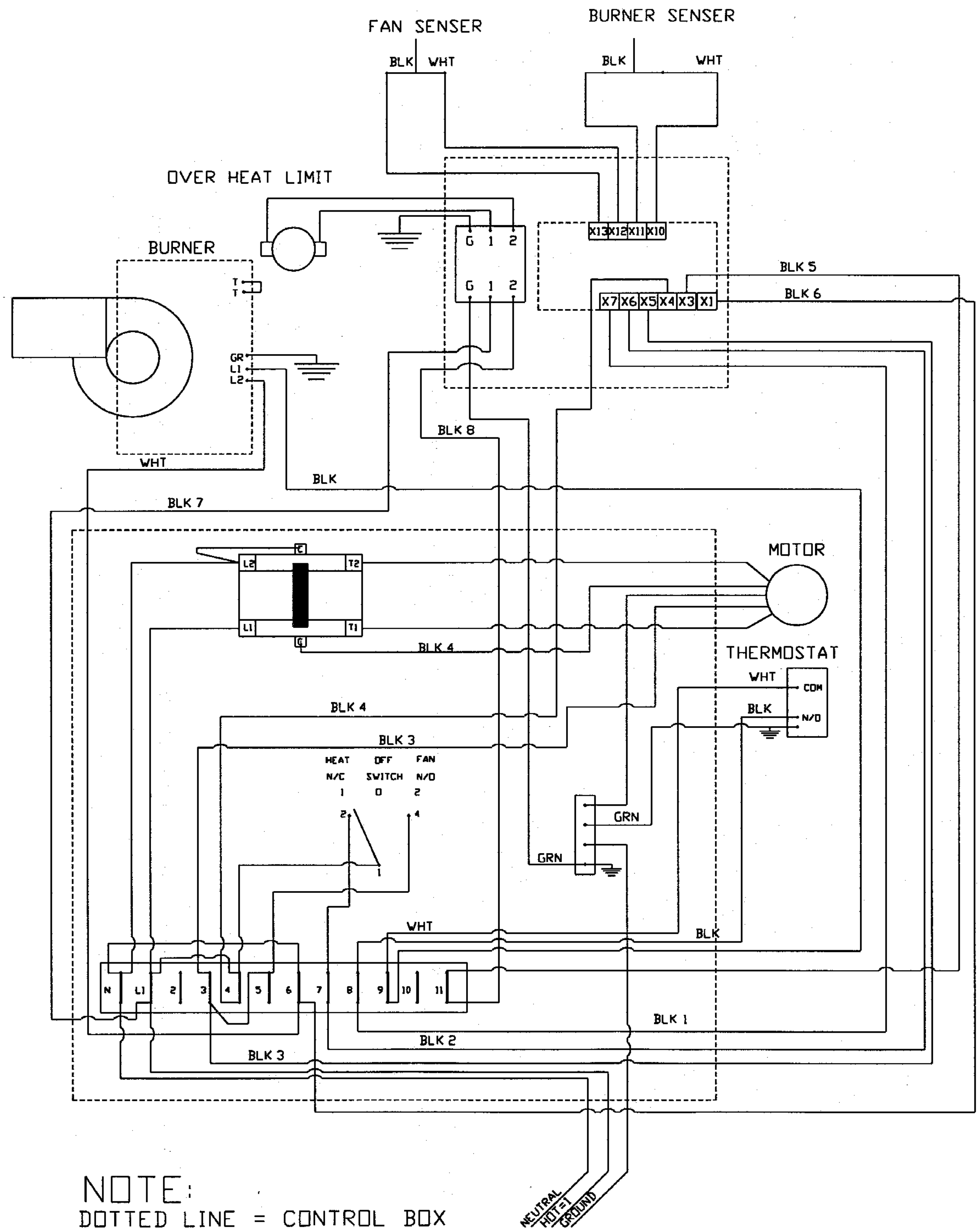
120 Volt 1 PH



ITEM	PART#	DESCRIPTION
E1	HWP 41000	MAIN CONTROL BOX (Fibox 175x125x100 MM)
E2	HWP 40850	THERMOSTAT BOX (Fibox 125x125x75 MM)
E3	HWP 40900	FAN CONNECTION BOX (Fibox 175x125x75 MM)
S1	HWP 120021	MAIN SWITCH
S2	HWP 20579	HEATER CONTROL UNIT,
B1	HWP 20581	FAN SENSOR (for S4)
B2	HWP 20582	BURNER SENSOR (for S5)
S3	HWP 21400	OVERHEAT LIMIT SWITCH
X1	HWP 36701	TERMINAL BLOCK (E1)
X2	HWP 36100	GROUNDING BLOCK (E1)
	HWP 30330	POWER CABLE & PLUG
X4	HWP 36701	TERMINAL BLOCK (E2)
X5	HWP 36701	TERMINAL BLOCK (E3)

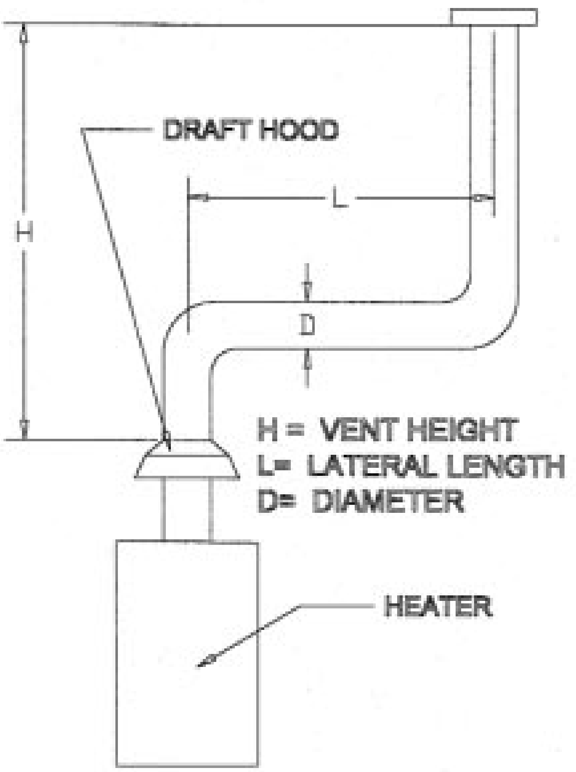


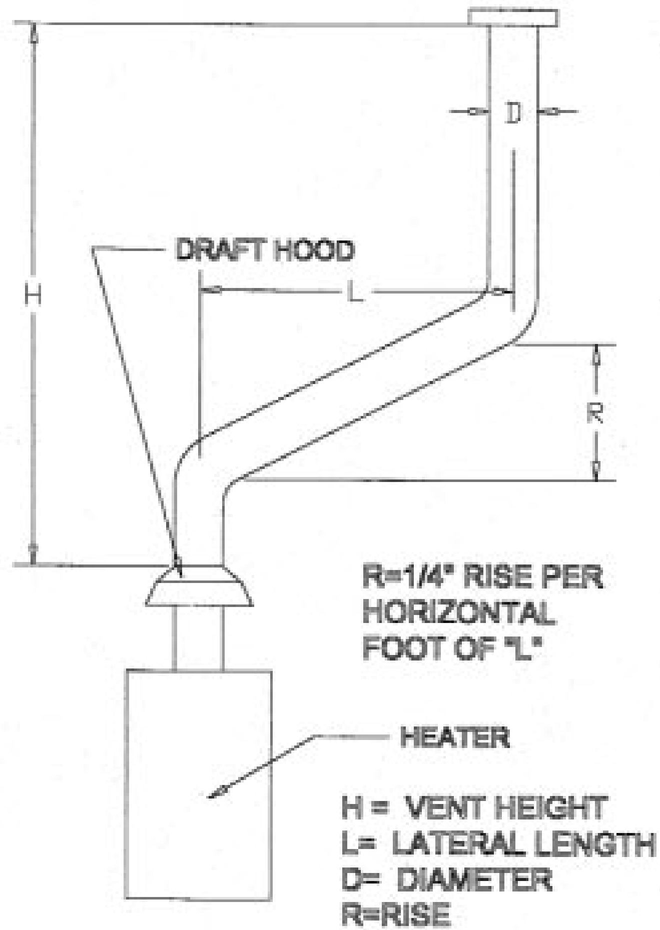
120 Volt 1 PH



NOTE:
DOTTED LINE = CONTROL BOX

EXHAUST FLUE PIPE GUIDELINES



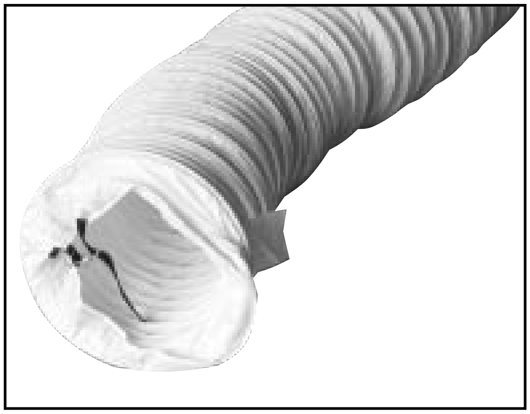


CAPACITY OF TYPE B DOUBLE-WALL VENTS SERVING A SINGLE DRAFT HOOD-HEATER x 1000 BTU'S

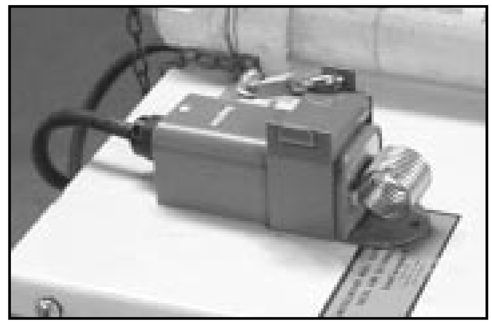
FOR INDOOR APPLICATIONS

		VENT DIAMETER, D,INCHES			
		6	7	8	10
TOTAL VENT HEIGHT,H, FEET	**LATERAL LENGTH, L, FEET**				
6	**0**	205	285	370	570
	2	157	217	285	455
	6	149	205	273	435
	12	137	190	255	406
8	**0**	235	320	415	660
	2	180	247	322	515
	8	165	227	303	490
	16	148	206	281	458
10	**0**	255	345	450	720
	2	195	273	355	560
	10	175	245	330	525
	20	154	217	300	486
15	**0**	285	390	525	840
	2	225	316	414	675
	15	198	275	373	610
	30	169	243	328	553
20	**0**	307	430	575	930
	2	249	346	470	755
	10	228	321	443	710
	20	206	295	410	665
	30	186	273	380	626
30	**0**	336	475	650	1060
	2	280	394	535	865
	20	237	343	473	784
	40	200	298	415	705

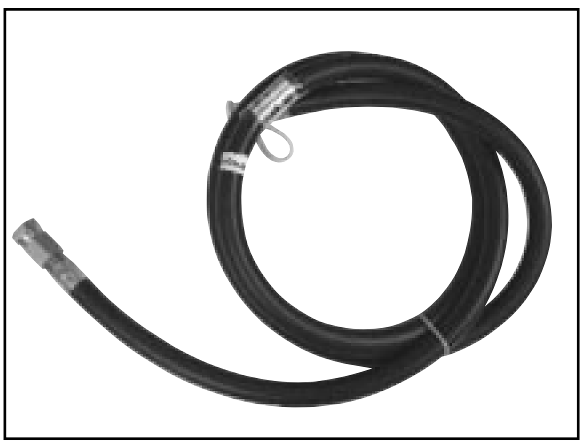
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